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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,367	10/30/2006	Kiminobu Hirata	050203-0140	5551
31824 7590 07/25/2007 MCDERMOTT WILL & EMERY LLP 18191 VON KARMAN AVE. SUITE 500 IRVINE, CA 92612-7108			EXAMINER TRAN, DIEM T	
			ART UNIT 3748	PAPER NUMBER
			MAIL DATE 07/25/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/566,367

Applicant(s)

HIRATA, KIMINOBU

Examiner

Diem Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hofmann et al. (US Patent 5,884,475).

Regarding claim 1, Hofmann discloses an exhaust gas purification apparatus of an engine comprising:

a nitrogen oxide reduction catalyst arranged in an engine exhaust gas passage to reduce and purify nitrogen oxide in exhaust gas using a liquid reducing agent (see col. 1, lines 64-67); a nozzle (24) having an injection hole that opens into the exhaust gas passage, and positioned on an exhaust gas upstream side of said nitrogen oxide reduction catalyst (see Figure 1); an operating state detecting device that detects an engine operating state; a reducing agent injection-supply device capable of injection-supplying a liquid reducing agent into the exhaust gas passage from said nozzle injection hole, based on the engine operating state detected by said operating state detecting device (see col. 8, lines 44-50); and a high pressure air supply device (28) that supplies high pressure air into said nozzle (24) when an injection flow rate of the liquid reducing agent from said reducing agent injection-supply device becomes zero (see col. 5, lines 25-32, col. 6, lines 45-50, col. 8, lines 62-65); however, fails to disclose supplying high pressure air into

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said nozzle for a predetermined period of time when reducing agent injection-supply device is stopped.

Since Hofmann discloses the urea solution which is still contained between the back flush valve and the nozzle is blown out into the exhaust gas line (42) through the use of pressurized air (29) (see Figure 4), it would have been obvious for one having ordinary skill in the art to realize that Hofmann discloses supplying high pressure air into said nozzle for a predetermined period of time and that there is no further section of the liquid supply line disposed between outlet opening and back flush valve.

Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hofmann et al. (US Patent 5,884,475) in view of Brenner et al. (US Patent 6,041,594).

Regarding claim 2, Hofmann discloses all the claimed limitations as discussed in claim 1 above, however, fails to disclose that said reducing agent injection-supply device reduces a pressure of compressed air stored in an air reservoir tank to a predetermined pressure, and mixes the compressed air whose pressure is reduced with the liquid reducing agent to transform into an atomized state, and then injection-supplies this from said nozzle injection hole into the exhaust gas passage. Brenner teaches that reducing pressure of compressed air stored in an air reservoir tank (12) to a predetermined pressure before mixing the compressed air with the liquid reducing agent to form an atomized state to inject reducing agent into the exhaust gas (see Figure 1, col. 2, lines 31-50).

It would have been obvious for one having ordinary skill in the art, to have utilized the teaching of Brenner in the Masuda device, since the use thereof would have improved the efficiency for injecting reducing agent into the exhaust gas system.

Regarding claim 3, Hofmann further discloses that said high pressure air is compressed air which is stored in said air reservoir tank (28) (see Figure 1).

Regarding claim 4, Hofmann further discloses that an air compressor (pump P) for pressurizing the atmosphere to a predetermined pressure, and said high pressure air is compressed air which has been pressurized by said air compressor (pump P) (see Figure 1).

Regarding claim 5, Hofmann further discloses a pressure-reducing device (20) that can be switched to either let compressed air stored in said air reservoir tank pass through directly, or to reduce the pressure to a predetermined pressure as it passes through, and said reducing agent injection supply device and said high pressure air supply device exclusively each use the compressed air that has been reduced in pressure to a predetermined pressure by said pressure reducing device, and compressed air that has passed though directly (see Figure 4).

Conclusion

Any inquiry concerning this communication from the examiner should be directed to Examiner Diem Tran whose telephone number is (571) 272-4866. The examiner can normally be reached on Monday -Friday from 8:00 a.m.- 5:30p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reached on (571) 272-4859. The fax number for this group is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 800-786-9199 (toll-free).



Diem Tran
Patent Examiner
Art unit 3748

DT



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